

New additions to the Pteridophytic flora of India from Great Nicobar Island¹

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(With seven text-figures)

INTRODUCTION

A botanical survey of Great Nicobar Island was undertaken in 1966 under the Joint Scientific Expedition, organised by the Government of India, with a view to explore the plant wealth of this remote island in the Bay of Bengal. Great Nicobar is the largest of the southernmost group of Nicobars, lying between longitudes 93°37' and 93°56' E. and latitudes 6°45' and 7°15' N. It is roughly 55 km long and 30 km wide with an area of 865 sq km. Two principal ranges of mountains run more or less north to south and the highest point is Mount Thulier. Five perennial rivers (Galathea, Alexandra, Dogmar, Amrit Kaur, Jubilee) take their origin from these hill ranges. The climate is tropical with a heavy rainfall (300 cm per year). The vegetation is divisible into: (1) Mangrove forests; (2) Beach forests; (3) Low evergreen forests; (4) High wet evergreen forests; and (5) Riverine vegetation. The forests are very dense with trees, climbers and shrubs with little herbaceous undergrowth on the forest floor.

The climate, soil, rainfall and the resultant vegetation afford rich and luxuriant growth of ferns and fern allies which are both terrestrial and epiphytic. A number of ferns were collected during the above expedition and a careful

and critical study of them proved to be not only interesting but many have turned out to be new records for Indian territory. Such new records are treated here with brief diagnostic characters and with illustrations wherever possible. All the specimens are preserved in the Central National Herbarium; Howrah (CAL).

1. *Acrostichum speciosum* Willd. Sp. Pl. 5:117, 1810. (Fig. 1).

A terrestrial fern, found in mangrove creeks. *Stipe* and *frond* 1 m tall; fronds simply pinnate, lower pinnae sterile while upper ones fertile. *Sterile pinnae* 25 × 4 cm, shortly stalked, base unequal and cuneate, apex narrowly acuminate, blade coriaceous, midrib raised on lower surface; stalk of the pinnae 0.5 cm long. *Fertile pinnae* similar to sterile ones but smaller; sori superficial covering the entire lower surface.

Distribution. Tropical Asia, Malayan Peninsula and Australia.

Specimens examined. Campbell Bay, Great Nicobar, Apr. 1966—*Thothathri* and *Banerjee* 11659 (CAL).

2. *Colysis macrophylla* (Bl.) Presl. Epim. Bot. 147, 1849. *Grammitis macrophylla* Bl. Enum. Pl. Java 119, 1828. (Fig. 2).

An epiphytic fern, common on branches of trees and shrubs. *Rhizome* creeping and clasping by means of roots; scales brown, lanceolate; *stipe* 3-7 cm long, naked. *Frond* simple, lanceolate, 25-35 × 5-7 cm, gradually narrowed at both ends, entire, thin; veins indistinct, slender and zigzag with copious, uniform, subquadrangular areolae with free veinlets enclosed within. *Sori* in single continuous row between the main veins.

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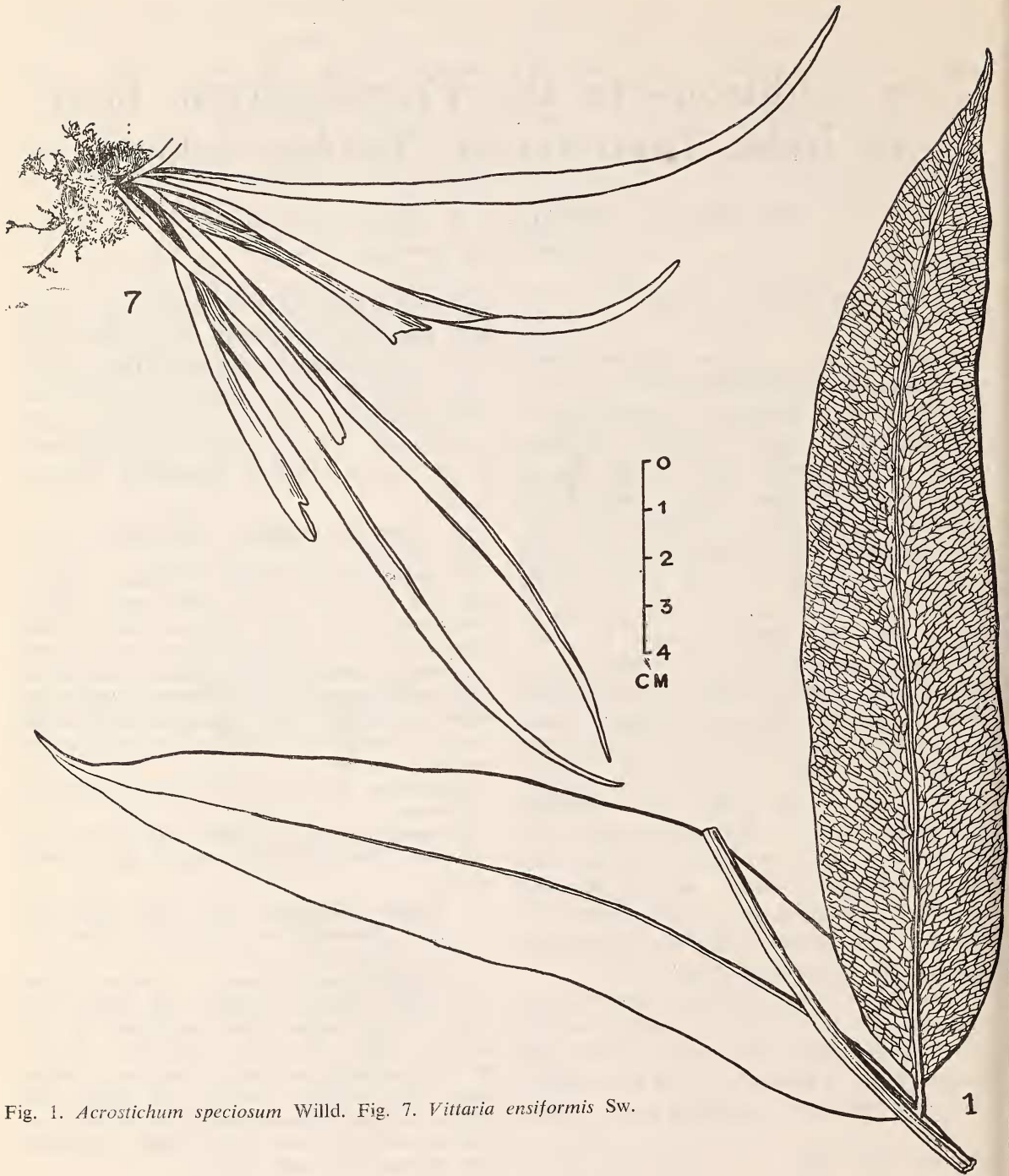


Fig. 1. *Acrostichum speciosum* Willd. Fig. 7. *Vittaria ensiformis* Sw.

Distribution. Malayan Peninsula, Philippines and New Guinea.

Specimens examined. Rosen point, Campbell Bay, Great Nicobar Island, Mar. 1966—*Thothathri* and *Banerjee* 11381 (CAL).

3. *Colysis selligaea* (Mett.) Ching in *Sunyatsenia* 5: 261, 1940. *Polypodium selligaea* Mett. Pol. III n: 214, 1857. (Fig. 6).

Epiphytic on branches of small trees; rhizome creeping, ± 3 mm thick, scaly; scales black with a tuft of hairs at its base, $\pm 5 \times 1$ mm, narrowed above, minutely serrate at margin. *Fron*ds 15-30 \times 2-3.5 cm, stipe ± 2 cm long, lower part of the blade gradually narrowed, papyracea-herbaceous; primary veins distinct connected by transverse veinlets. *Sori* superficial, 2-4 in a line in between the main veins.

Distribution. Malayan Peninsula and Philippines.

Specimens examined. From Galathea Bay to Pulo-baha Bay, Great Nicobar Island, Mar. 1966—*Thothathri* and *Banerjee* 11535 (CAL).

4. *Cyclosorus polycarpus* (Bl.) Holtt. in *Fl. Malaya* 2: 283, 1954. *Aspidium polycarpum* Bl. Enum. Pl. Java 156, 1828. (Fig. 3).

A terrestrial fern on river banks growing under shade. *Fron*d stout, about 1.5 m tall with closely placed sessile as well as reduced pinnae along the stipe; lower pinnae spreading while upper ones gradually reduced merging with the lobed, triangular apex of the frond. *Pinnae* $\pm 30 \times 1.5$ cm, base subtruncate with basal segments slightly produced; segments acuminate, margin cut about or beyond halfway to the costa into slightly oblique, entire, blunt lobes; lobes ± 4 mm long; upper surface of lamina mostly glabrous with numerous, round, yellow glands in between veinlets, lower surface and costae covered with short, spreading hairs and yellow glands; veins in each lobe 12 pairs, oblique, lowest anastomosing. *Sori* median on veins, twice as long as broad, occupying most of the lower surface.

Distribution. Malayan Peninsula and Siam.

Specimens examined. Dogmar river, Casuarina Bay, Great Nicobar Island, Apr. 1966—*Thothathri* and *Banerjee* 11600 (CAL).

5. *Humata heterophylla* (Sm.) Desv. Prodr. 323, 1825. *Davallia heterophylla* Sm. Mem. Ac. Turin. 5: 415, 1793. (Fig. 4).

Epiphytic on branches of *Barringtonia asiatica* Kurz. *Rhizome* slender, wide-creeping, ± 2 mm

thick, densely scaly; scales dark brown, subulate, attenuate, $\pm 6 \times 1$ mm, finely toothed. *Fron*ds dimorphous, 1.5-4.5 cm apart; stipes 1-1.25 cm long, slightly winged, densely scaly at base; sterile fronds ovate-lanceolate, 1.5-2.5 cm long, cuneate at base, shortly acuminate at apex, entire to undulate, irregularly lobed at times, coriaceous, lateral veins prominent, once, twice or more forked. *Fertile fronds* irregularly lobed or deeply sinuate-pinnatifid, 4-8 \times 3 cm, lobes oblong, rounded at apex; sori terminal on each veinlet, 3-8 on each lobe, indusia $\pm 1 \times 1.5$ mm, thin, attached by its broad base.

Distribution. Malayan Peninsula, Sumatra to Pacific.

Specimens examined. Campbell Bay, Great Nicobar Island, Apr. 1966—*Thothathri* and *Banerjee* 11637 (CAL).

6. *Nephrolepis biserrata* (Sw.) Schott. Gen. Fil. t. 3, 1834. *Aspidium biserratum* Sw. Schrad. Journ. Bot. 1800(2): 32, 1801. (Fig. 5).

An epiphytic fern on trunks of large trees. *Fron*ds 1.5 cm long, simply pinnate, pinnae about 80 pairs; stipe up to 60 cm long; pinna 18 \times 2 cm, basal one gradually shorter and more widely placed, truncate at base, faintly crenate at margin, shortly acuminate at apex, veins faint, once or twice forked. *Sori* globose, superficial, one to each crenature and terminating the unforked vein; indusia circular with a narrow sinus.

Distribution. Pantropical especially in Malayan Peninsula.

Specimens examined. Forests in Campbell Bay, Great Nicobar Island, Mar. 1966—*Thothathri* and *Banerjee* 11390 (CAL).

7. *Trichomanes motleyi* Bosch. Ned. Kruidk. Arch. 5: 145, 1861.

Epiphytic, growing adpressed to barks of tree trunks. *Rhizome* slender. *Fron*ds simple or lobed, stalked, 4-6 mm long, not hairy at edges; sterile fronds slightly elongated, rounded at base, ± 4 mm long; fertile fronds cuneate at base, bilobed at apex. *Sorus* single, free and situated in the notch of the frond; indusium tubular, mouth dilated, receptacle sometimes protruding.

Distribution. Malayan Peninsula and Borneo.

Specimens examined. Way to Pulokunio, Casuarina Bay, Great Nicobar Island, Apr. 1966—*Thothathri* and *Banerjee* 11571 (CAL).

8. *Vittaria ensiformis* Sw. Ges. Nat. Fr. Berl. Neu. Schr. 2: 134, t. 7, 1799. (Fig. 7).

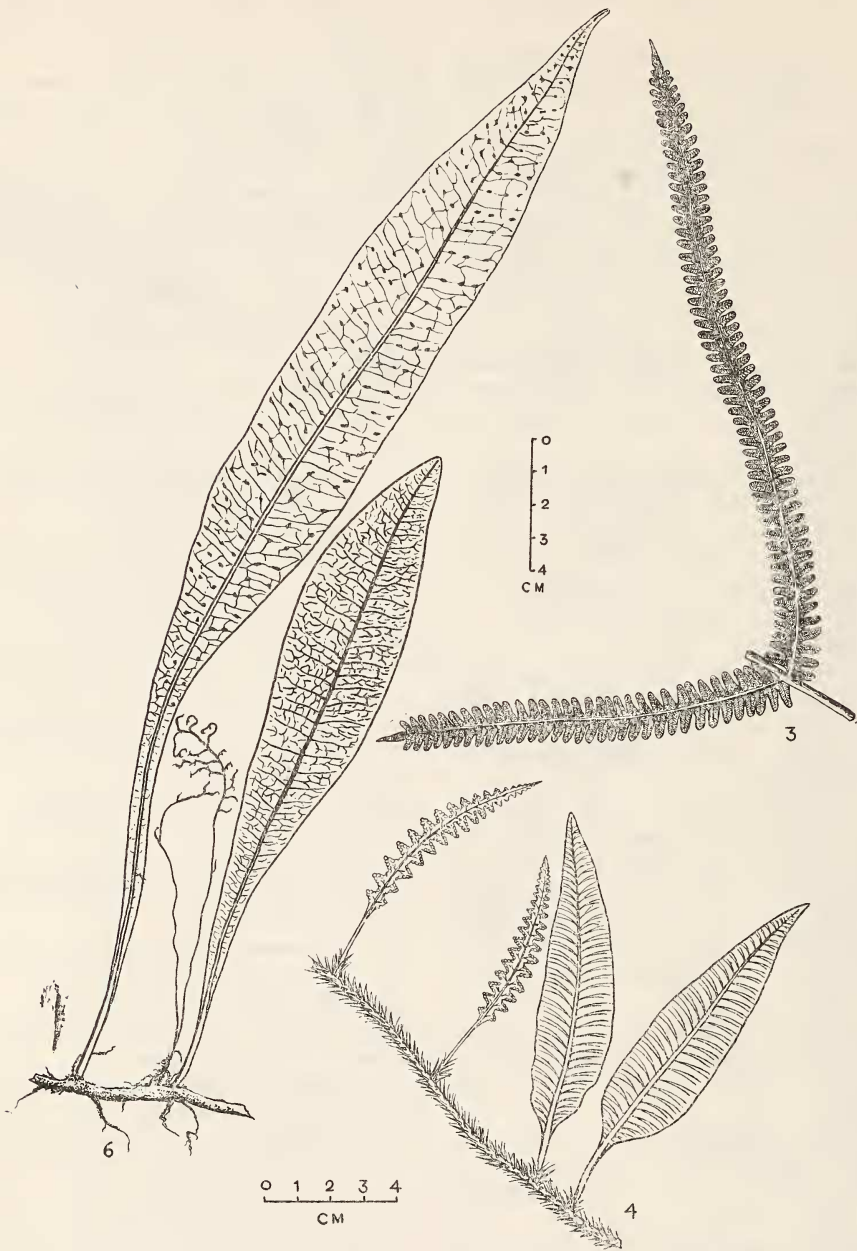


Fig. 3. *Cyclosorus polycarpus* (Bl.) Holtt. Fig. 4. *Humata heterophylla* (Sm.) Desv.
Fig. 6. *Colysis selligera* (Mett.) Ching.

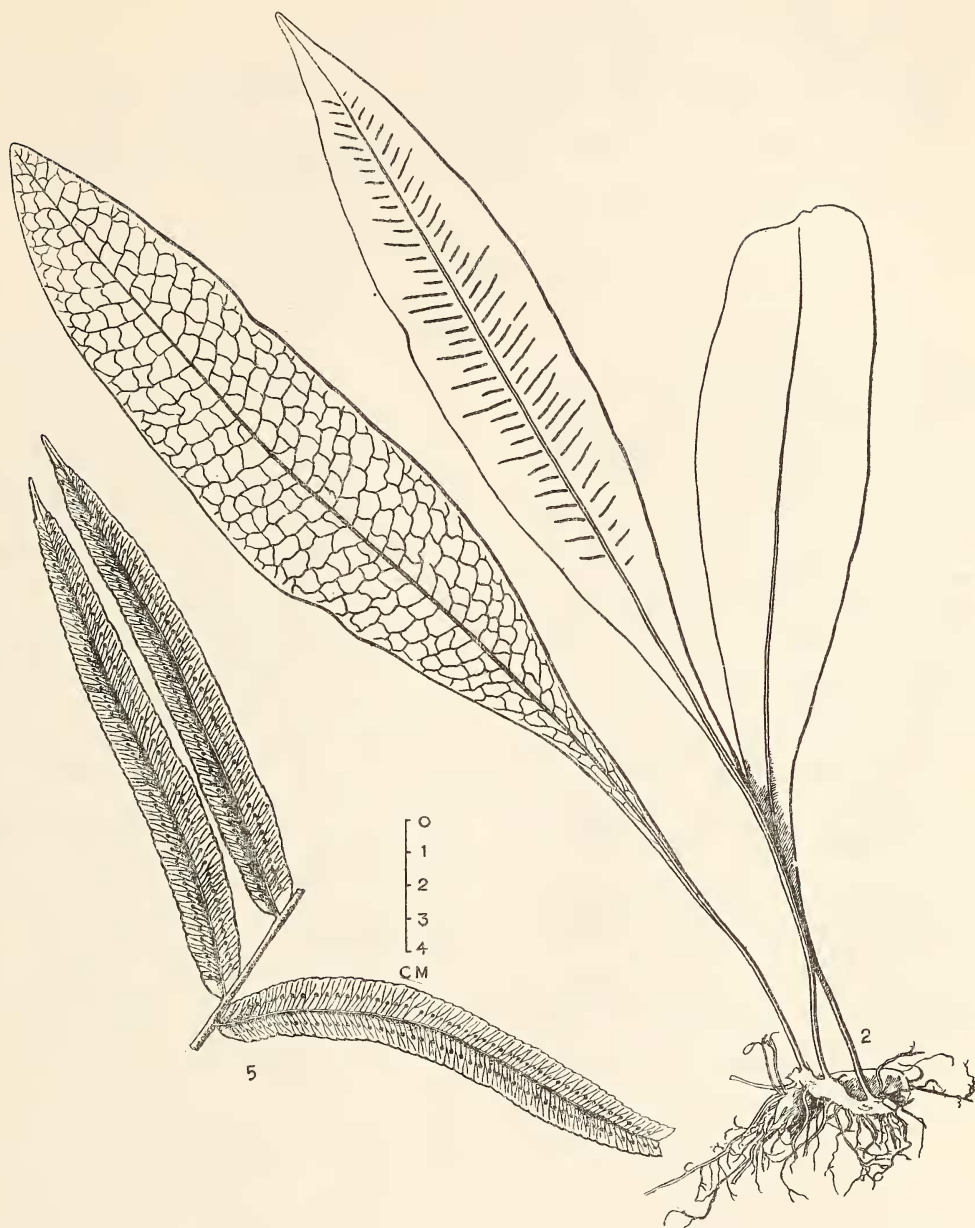


Fig. 2. *Colysis macrophylla* (Bl.) Presl. Fig. 5. *Nephrolepis biserrata* (Sw.) Schott.

Epiphytic on trees. *Rhizome* short bearing closely arranged fronds. *Fronds sessile*, $\pm 20 \times 4-6$ cm, subcoriaceous, gradually narrowed at base, acuminate at apex, midrib indistinct on the lower surface. *Sori* in marginal grooves, covered by the reflexed margin of the frond.

Distribution. Malayan Peninsula, Mascarene Islands.

Specimens examined. Galathea Bay, Great Nico-

bar Island, Mar. 1966—*Thothathri* and *Banerjee* 11478 (CAL).

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